User Manual

UML2 Meta-model Viewer

Version 1.5.0

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1 Introduction

This program can be used to explore and inspect the UML2 Metamodel as published by the OMG. The model is derived from the UML 2.5 beta 1 cmof-files provided by the OMG with the URL http://www.omg.org/spec/UML/2.5/Beta1/.

The purpose of this software is to provide an Explorer-like view of the UML2 Metamodel and to draw diagrams with the classes in the UML2 Metamodel in a semi-automated way.
The software should be helpful to implementers of modeling software if they have to use the UML2 Metamodel.

2 Installation

2.1 Requirements

UML2 Metamodel Viewer requires:

- Microsoft Windows XP or higher
- Microsoft .NET framework 4.0 Client Profile or the full .NET framework 4.0
- An installation of the graphviz package
- A recent Java Development Environment
- The file UmlGraph.jar

If the .NET framework is not installed on your computer you can download and install it from Microsoft's website (http://www.microsoft.com/download/en/details.aspx?id=24872). You should choose the appropriate language.
The installation requires administrator privileges.

GraphViz can be downloaded from http://www.graphviz.org/Download.php.

UmlGraph can be downloaded from http://www.umlgraph.org/download.html.

2.2 Installation

Attention: starting with version 1.5 we introduced a new file format for storing projects. This format is not compatible with earlier versions. We are sorry for any inconveniences.

Load the current version of UML2 Metamodel Viewer from our website using this link:

http://www.empowertec.de/assets/Uploads/UMLMetaModelViewer/UML2MetaModelViewerSetup.exe

Execute the file.

If desired, the suggested destination directory can be changed. The installation requires administrator privileges.

Start the Program and configure the external Tools (click "Options" in the application menu).
Without configuring the external tools no diagrams can be drawn.

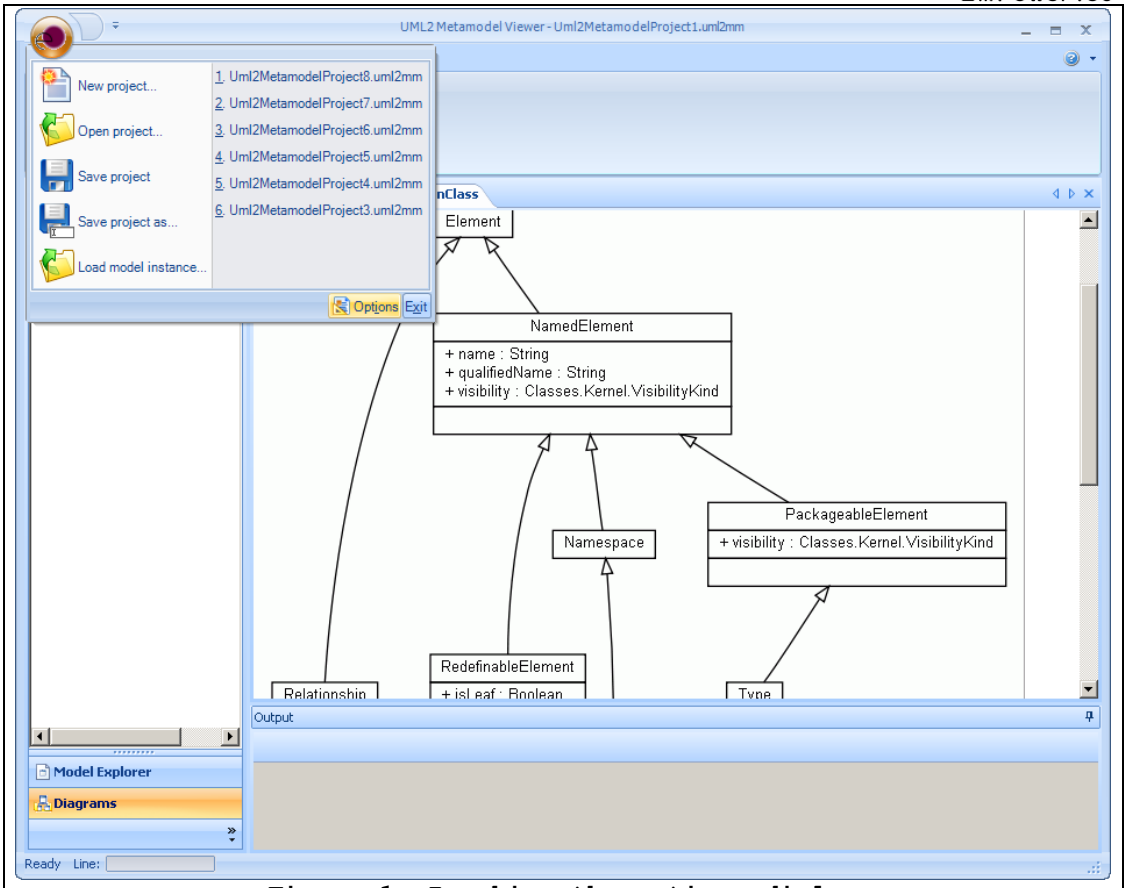


Figure 1: Invoking the options dialog

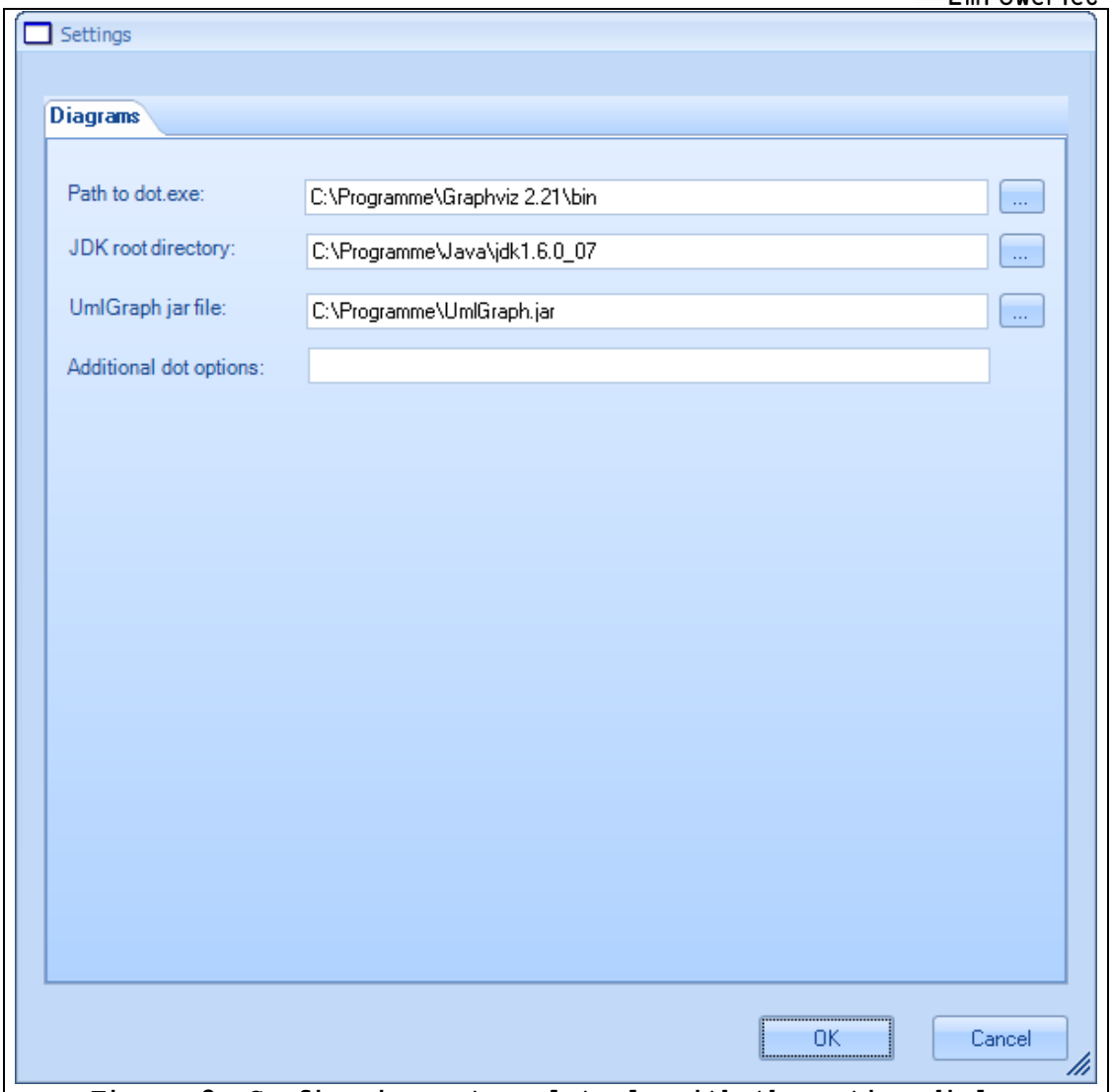


Figure 2: Configuring external tools with the option dialog

2.3 Updates

To install a new version simply download it from our website, uninstall the old version and install the new version as described in chapter 2.2.

2.4 Uninstalling

To uninstall this software you may simply choose the according menu entry in the start menu.
Alternatively, you can use the Windows control panel to remove the software.

2.5 Printing this manual

If you print the manual with Adobe Acrobat Reader with default print settings, the pages are smaller than intended because

Acrobat Reader scales the pages. To get a printout in original size, please uncheck all the scaling options in the "Copies and Adjustments" section of the Acrobat Reader print dialog box.

3 GUI Basics

3.1 Overview

UML2 Metamodel Viewer uses the concept of the "Ribbon control" which was introduced by Microsoft with their Office 2007 product line.
The idea of the Ribbon control is to organize related functionality in dedicated "Ribbon tabs" and to selectively activate the Ribbon tab that is relevant to the current context.

Currently, UML2 Metamodel Viewer uses a single ribbon tab named "Diagrams".

The Ribbon tab is located at the top of the main window like a traditional menu.

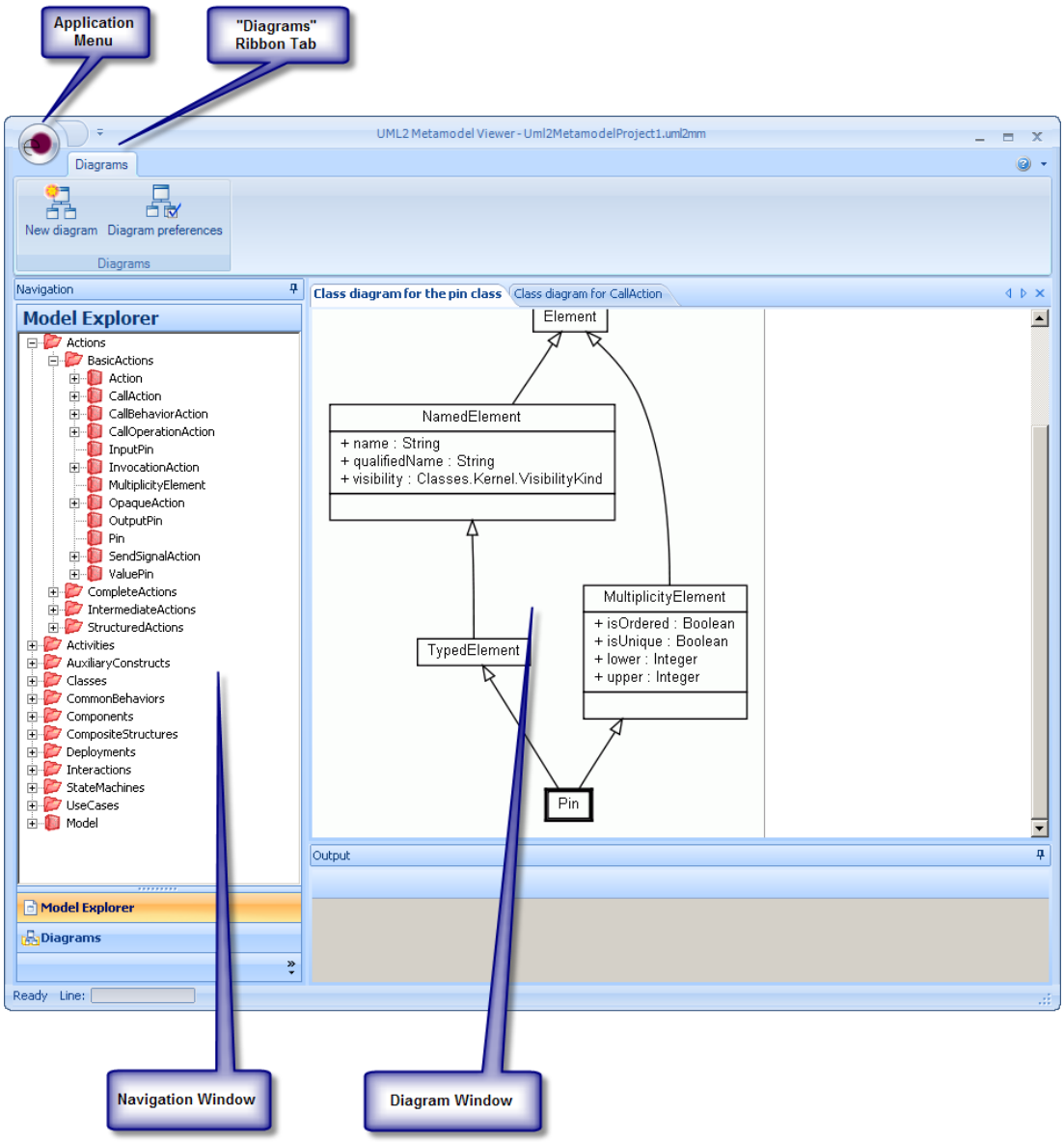


Figure 3: GUI overview

The left side of the main window – the Navigation window – contains a set of views that can be used to manipulate and view various aspects of the projects:

- The UML2 Metamodel
- The class diagrams that have been added to the project

Only one of these views is active at a given time. Click on a views tab to activate the view.

The lower right area of the main window contains the output window. UML2 Metamodel Viewer currently does not use the output window.

The rest of the main window is used for displaying class diagrams (one or more diagram windows).

3.2 Arranging Screen elements

The "Navigation" area and the "Output" area can be attached to an arbitrary side of the main window by clicking in their title bar and dragging the area to the desired position.
A visual indicator appears that signals where the area will be placed.

The following screenshot shows the "Navigation" area docked at the right border. The "Output" area is currently moved and would be docked at the upper border if the mouse button would be released.

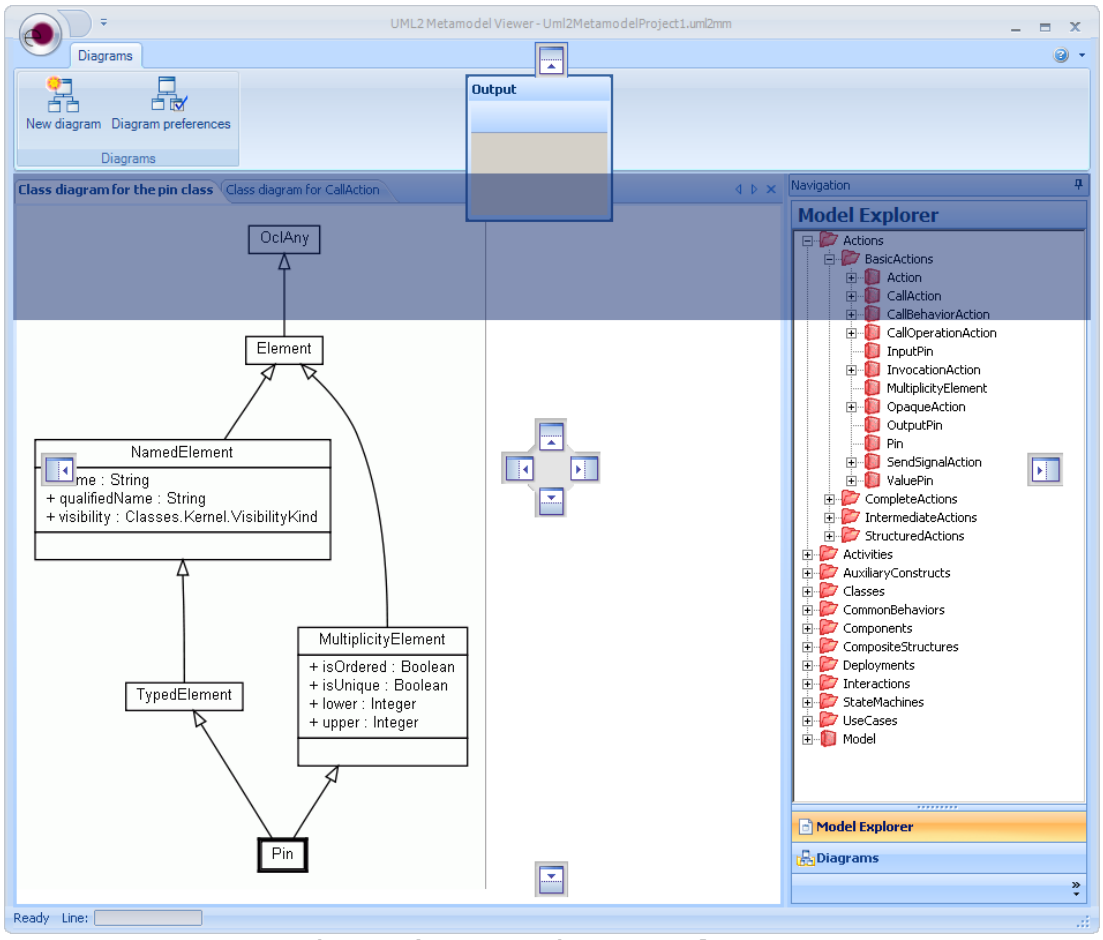


Figure 4: Arranging GUI elements

In a similar way (by dragging the window handle), multiple diagram windows can be created.
For example, in the following screenshot two diagram windows are used.

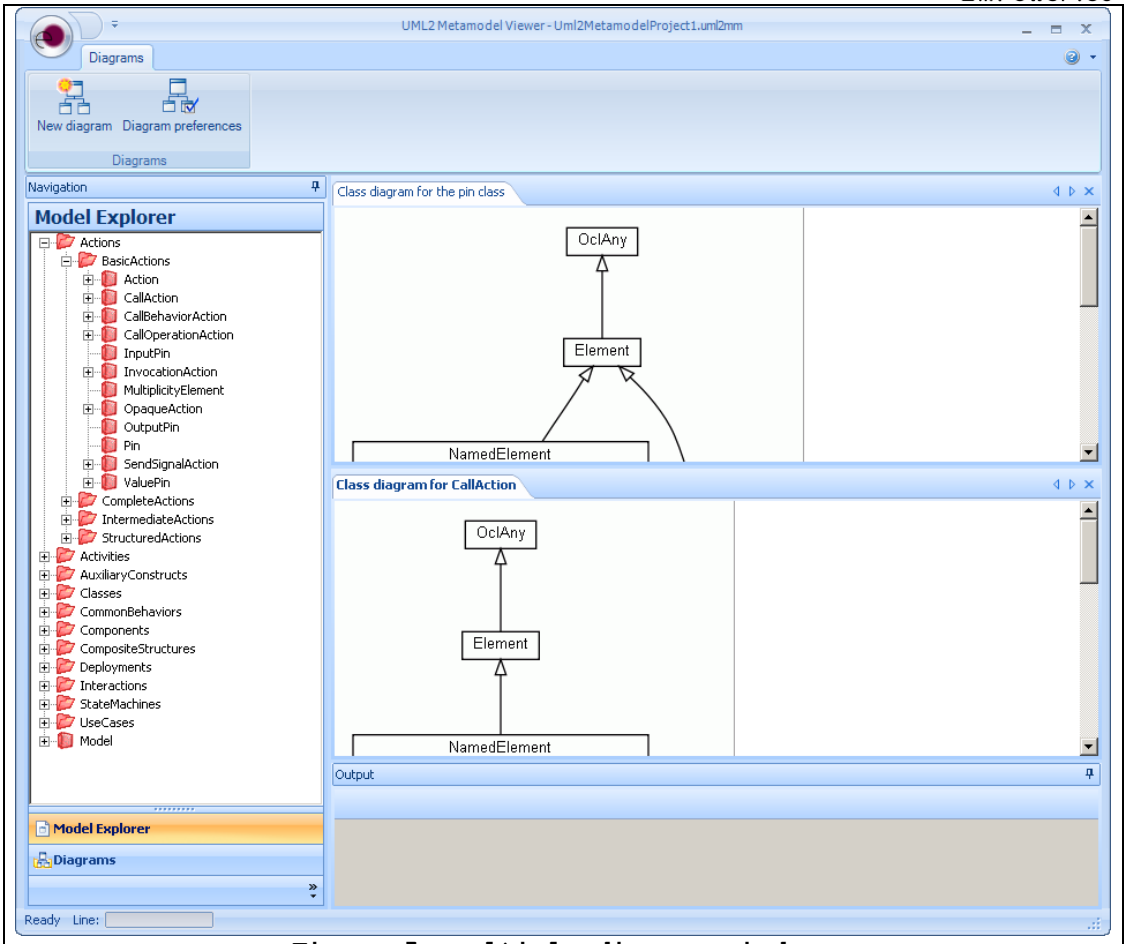


Figure 5: multiple diagram windows

3.3 The Quick Access Toolbar

At the right side of the "Application button" there is a small handle that can be used to access the Ribbons "Quick Access Toolbar" (QAT).

Most interface elements on a Ribbon tab can be added to the QAT.
To add or remove commands to or from the QAT click on the small handle at the right side of the QAT and click on the menu entry "Customize Quick Access Toolbar…".

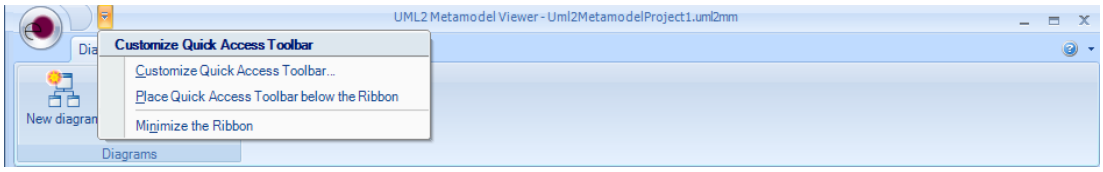


Figure 6: Modifying the Quick Access Toolbar

4 Understanding UML2 Metamodel Viewer projects

With UML2 Metamodel Viewer you can create class diagrams from the UML Metamodel. It is possible to create multiple diagrams and to set various options for each diagram. A collection of such diagrams along with their options is saved within a project. A project is a simple text file that contains all associated information. By default, UML2 Metamodel Viewer uses the extension ".uml2mm".

4.1 Creating a new project

Use the application menus entry "New project" to create a new project. UML2 Metamodel Viewer will give the project a default name. You can use the application menus entry "Save project as…" to save the project under another name and/or directory.

4.2 Adding diagrams to a project

To add a new diagram to the current project, click on the "New Diagram" button in the "Diagrams" Ribbon tab. The diagram must have a unique, non empty name.

4.3 Adding classes to a diagram

To add classes to a diagram drag and drop the class from the Model Explorer onto the diagram. The class and the classes that are coupled with it are added to the diagram.

Automatically adding the coupled classes (superclasses and related classes) is one of the main benefits of UML2 Metamodel Viewer. Simply add a single class to the diagram and its connections to other classes are immediately visible.

If you add more than one class to a diagram, the classes that are implicitly added are the union of the classes that would have been added if you would have added the two classes to two different diagrams (e.g. a common superclass appears only once in the diagram).

It is possible to alter the detail of information both on a diagram level and on a class level. Use the "Diagram Preferences" button to modify a diagrams setting.

4.4 Removing classes from a diagram

To remove a class from a diagram, right click on the classes' node in the Diagram Explorer. In the context menu, chose "Remove class".

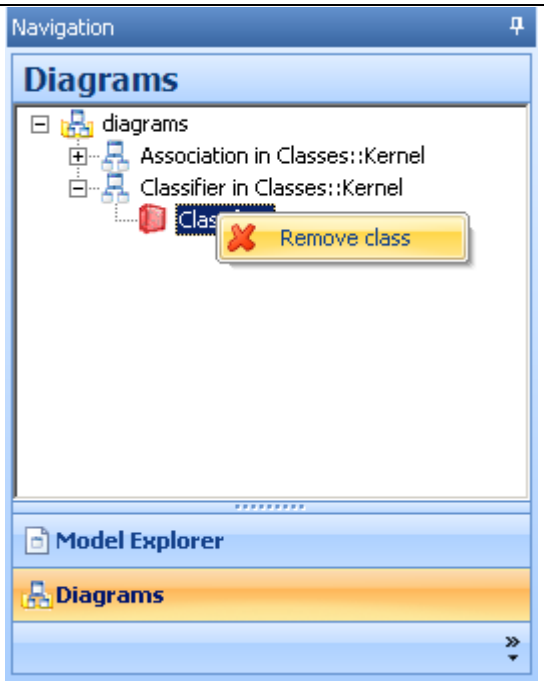


Figure 7: Remove class from diagram

5 Using the Metamodel Explorer

The Metamodel Explorer provides an Explorer-like view of the UML2 Metamodel. Its nodes consist of packages, classes, attributes and associations.
The following icons are used to represent the various types of elements:

Icon	Element type
	Package
	Class
	Attribute
	Method
	Association

If you place the mouse over an element and do not move it for a short time, a tooltip appears that contains some additional information about the element. In particular, the comment from the OMG cmof-file is displayed.

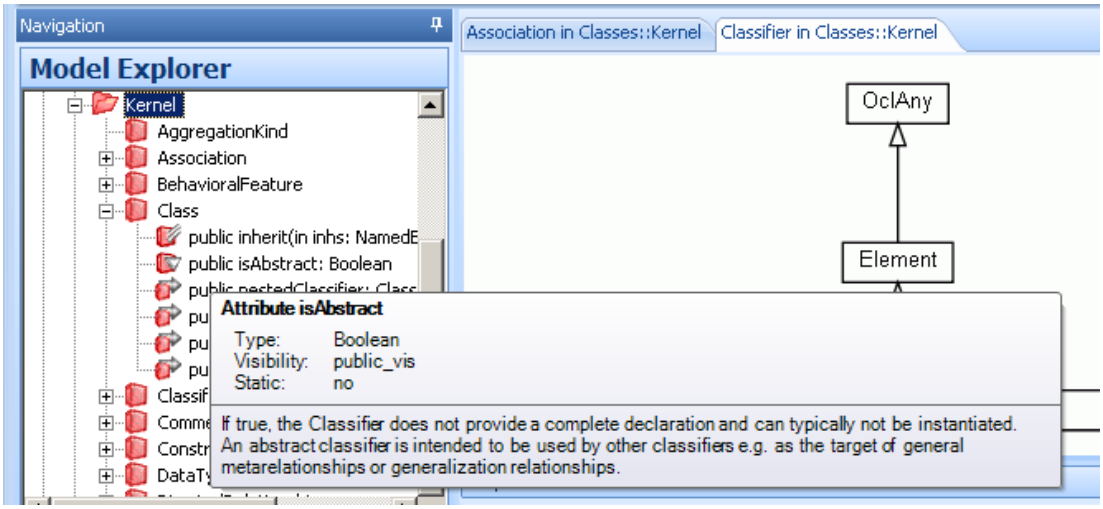


Figure 8: Tooltip providing additional information

6 Working with diagrams

6.1 Overview

Diagrams are non interactive graphics that cannot be manipulated directly. To add or remove classes, attributes and relations the "Diagram properties" dialog must be used.

The layout of the diagram is automatically calculated and cannot be changed directly.

It is possible to zoom in and out of a diagram by using the mouse wheel while holding the shift key. Double clicking in a diagram restores it to its default zoom.

Further, it is possible to select an area of the diagram. This area can then be copied to the clipboard or it can be zoomed. In the latter case, the whole diagram is zoomed and it is ensured that the selected area is visible.

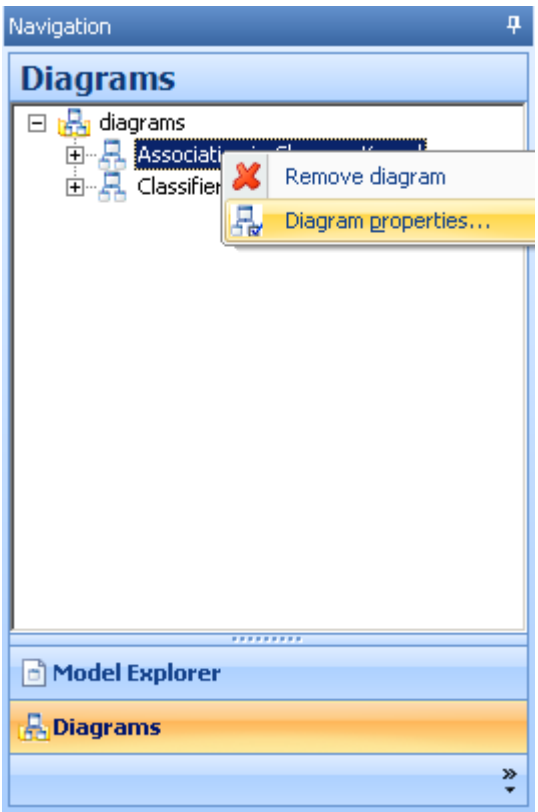


Figure 9: Change diagram properties

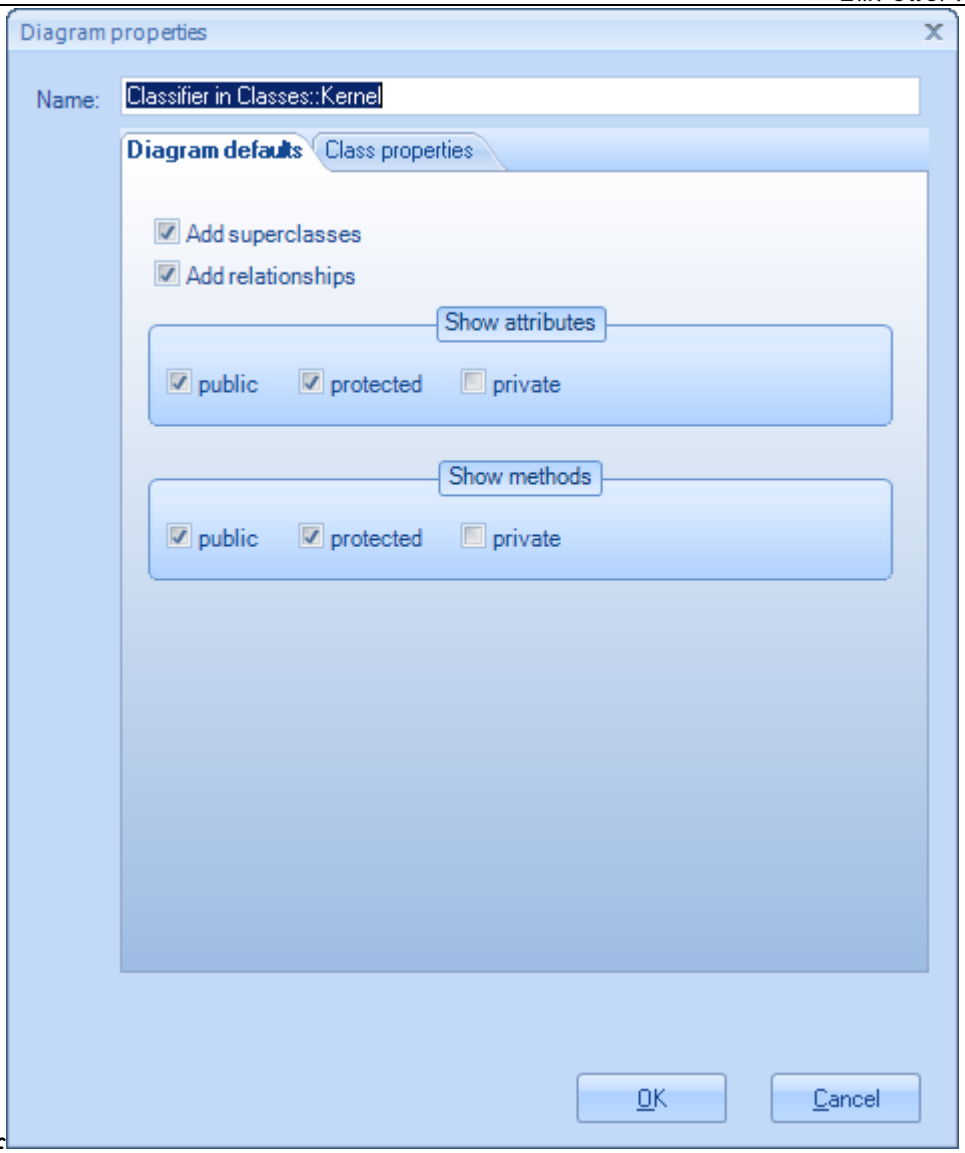
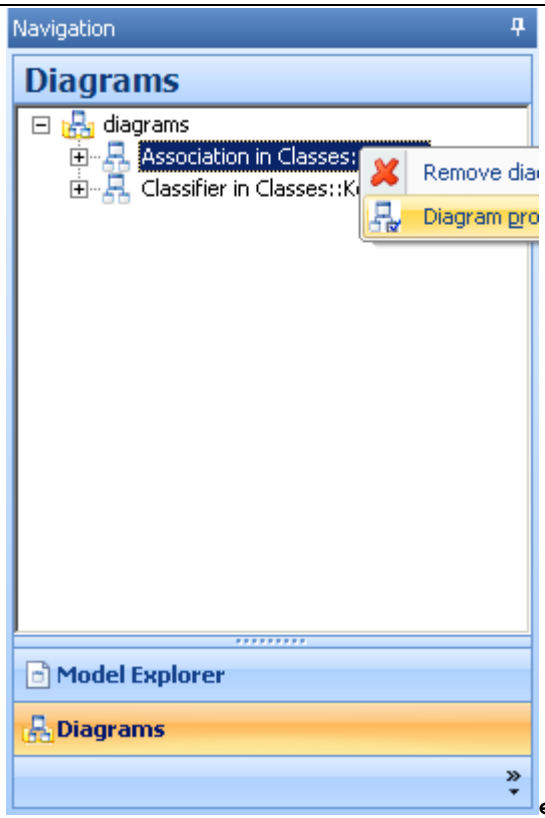


Diagram properties
Name:
Classifier in Classes::Kernel
Diagram defaults
Class properties
Add superclasses
Add relationships
Show attributes
public
protected
private
Show methods
public
protected
private
OK
Cancel

Figur



e 10: Using selected areas of a diagram

6.2 Changing diagram properties

Use the context menu on a diagram to invoke the "Diagram properties" dialog window.

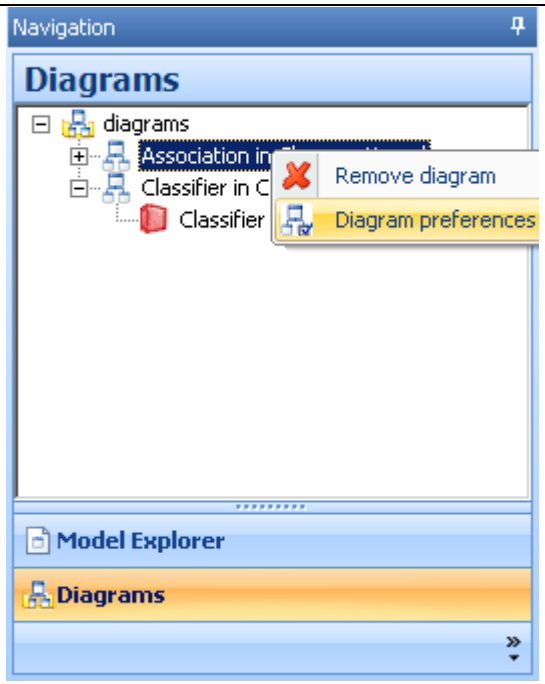


Figure 11: Changing diagram properties

A new window appears that can be used to edit the diagrams properties.

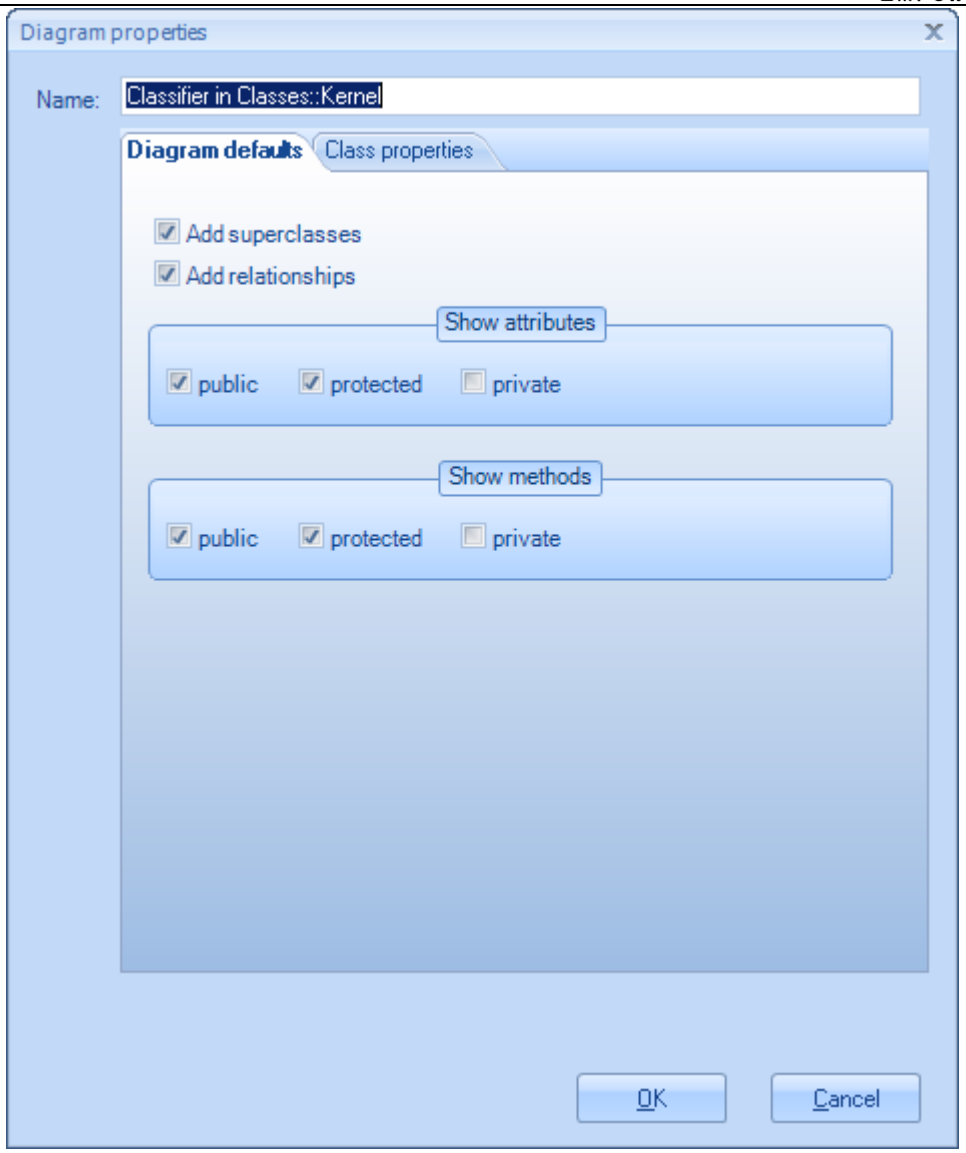


Figure 12: Diagram properties dialog

6.3 Zooming in and out in diagrams

When the focus is in a diagram window, the diagram can be zoomed in and out by using the mouse wheel while the shift key is pressed.
The zoom state is not persistent.

6.4 Copying parts of diagrams to the clipboard

It is possible to select part of a diagram with the mouse by clicking in the upper left corner of the area that should be selected and drag the mouse to the lower right corner. After the mouse button is released, a context menu appears with an

entry named "Copy". Click at this entry to copy the selected part of a diagram as an image to the clipboard.

6.5 Printing Diagrams

If a diagram is selected in the diagram TreeView, it can be printed by choosing the according menu entry in the application menu.

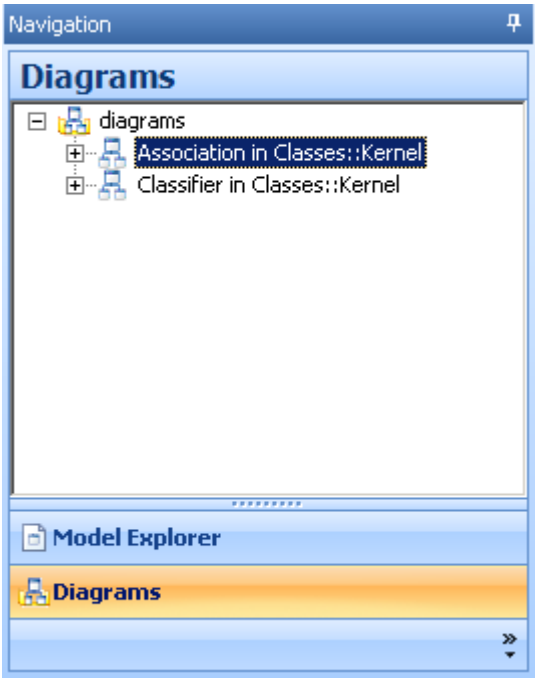


Figure 13: Selecting a diagram

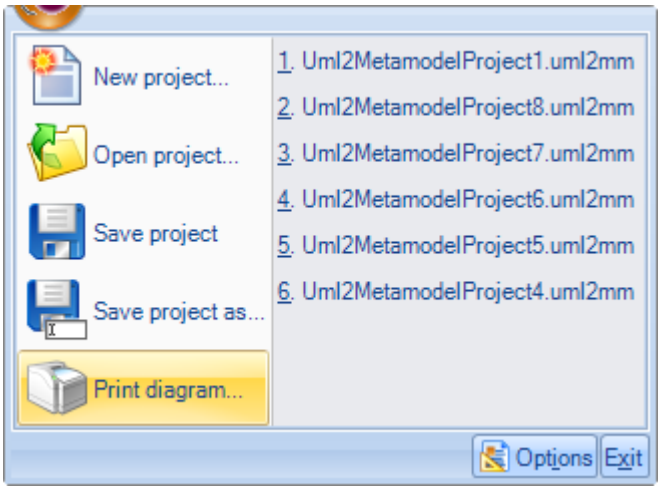


Figure 14: Printing a diagram

7 Using other Metamodels

Starting with version 1.1.0, the UML Metamodel Viewer supports also other OMG Metamodels. Currently these additional Metamodels can be used:

Metamodel	Shortcut
UML Action Language Abstract Syntax	ALF

To use another Metamodel than the UML2 Metamodel, the configuration file that comes with UML2 Metamodel Viewer must be modified. The configuration file is named uml2mmviewer.etcfg.

Locate this section:

```
<ApplicationPlugin name="Uml2Plugin" assembly="EmPowerTec.Uml.Uml2.dll"
class="EmPowerTec.Uml.Uml2.Uml2Plugin">
      <Option name="metamodel" value="UML"/>
    </ApplicationPlugin>
```

And change the value of the attribute “value” to “ALF”.

Projects that have been created with another Metamodel cannot be used.